Title 20 California Code of Regulations requires an applicant to discuss "the range of reasonable alternatives to the project, including the no project alternative…which would feasibly attain most of the basic objectives of the project, but would avoid or substantially lessen any of the significant effects of the project, and an evaluation of the comparative merits of the alternatives."

4.1 NO PROJECT ALTERNATIVE

If the PEC were not constructed, the goals and objectives of the developer would not be met. Additionally, the direction to PG&E by the CPUC to "plan for and procure the resources necessary to provide reliable service" would not be met. PG&E would not be able to meet the capacity addition amounts found reasonable by the CPUC, and would be forced to meet anticipated system demand by other means.

4.2 ALTERNATIVE SITE LOCATIONS

If the PEC were to be constructed at an alternate location, the goals and objectives of the PEC would not be met as the PEC-PG&E agreement requires that the PEC be constructed at the Panoche site. As PG&E chose the PEC project and specified that the project be constructed at the chosen Panoche site, it should be assumed that the Panoche site best suits the requirements of PG&E and its customers.

4.3 ALTERNATE PROJECT CONFIGURATIONS

The PEC consists of four General Electric LMS100 combustion turbines. The power purchase agreement between PEC and PG&E requires that the PEC consist of these turbines in a simple cycle mode. Other generation configurations would not meet the goals and objectives of the PEC.

4.4 ALTERNATE TECHNOLOGIES

PEC briefly considered alternate technologies, such as generation facilities utilizing fuels such as coal, oil, biomass, or geothermal brine. PEC also looked at nuclear technology and solar generation technology. None of these fuels or technologies would be able to meet the reliability and dispatchability requirements contained in the PEC-PG&E agreement. Therefore, no alternate technologies would meet the goals and objectives of the PEC.

4.5 ALTERNATE LINEAR ROUTES

PEC has identified a corridor for the natural gas fuel line from the PG&E high-pressure line. The electric interconnection from the project to the PG&E substation is the most direct route, and is only 100 feet. PEC does not believe any alternate electric interconnect routes are

available. As the PEC is contractually obligated to construct the project at the Panoche site, alternate sites would not satisfy the agreement between PG&E and PEC.

4.6 WATER SUPPLY

PEC has investigated numerous sources of water required to supply the project. State Water Resources Control Board Resolution 75-58 lists water sources by priority for inland power plant cooling. Additionally, the geography and resources of the area surrounding the PEC also offer alternatives to the lower aquifer water source preferred by the PEC. Additional discussions of alternative water and wastewater options are located in Sections 5.5.2.1 and 5.5.2.2 of Section 5.5, Water Resources.

4.6.1 Ocean Water

Ocean water, and wastewater being returned to the ocean, are not feasible for the PEC as the ocean is too far away and there is no wastewater being returned to the ocean in the vicinity of the project.

4.6.2 Brackish Water

Brackish water is not as salty as sea water but is saltier than fresh water. The PEC proposes to use water from the upper aquifer (200 to 500 feet below ground surface [bgs]). The water in the upper aquifer that underlies the PEC project has the characteristics of brackish water. PEC has chosen to supply the project's water with lower quality water found in the upper aquifer, rather than the better water of the lower aquifer. The lower aquifer is located at approximately 1,100 to 1,500 feet bgs. The water in this aquifer has a total dissolved solids (TDS) content of approximately 1,550 mg/L. The brackish water in the lower aquifer is an alternative source of water for the project.

4.6.3 Irrigation Return Flow

PEC has investigated the amount and availability of agricultural return flow in the area of the project. It was determined that drainage water from irrigation practices is not available in sufficient quantities. The agriculture in the vicinity of the PEC uses drip irrigation, which minimizes drainage water from irrigation practices. This alternative is no longer considered viable for the PEC.

4.6.4 Inland Wastewater

The only water in the vicinity of the project with low total dissolved solids is the water in the lower aquifer and water delivered into the area, such as water in the State Water Project.

4.6.5 Reclaim Water

There are no waste water treatment facilities within 20 miles of the project. The nearest source of reclaimed water is in Firebaugh, which is located approximately 25 miles from the PEC site. The length of pipeline required for this option makes it economically infeasible for the PEC.

4.6.6 State Water Project

The State Water Project delivers water from Northern California to Southern California and the Central Valley through the California Aqueduct. The California Aqueduct is relatively close to the project, and this water could be considered an alternative source of water for the PEC. The PEC chose not to seek water from this source because it believes that PEC would be utilizing water that could be used for domestic and agricultural uses.